REMARKS

Reconsideration of the present application is respectfully requested.

Summary of Office Action

Claims 1-3, 5, 6, 8-12 and 16-26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application No. 2002/005612 A1 to Srikantan et al. (hereinafter "Srikantan").

Summary of Amendments

Claims 1-3, 5, 6, 8-12 and 16-26 are pending. Claims 1, 9, 16 and 22 are currently amended. No claims are canceled. No claims are added. No new matter has been added.

Response to Rejections under 35 U.S.C. § 103(a)

Applicants respectfully traverse the rejections. The amendments to the claims are made only for clarification. The amendments to the claims are made merely to explicitly state what was previously implicit in the claims. The amendments are not made in response to the rejections or to comply with any statutory requirement of patentability, since no such amendments are believed to be necessary.

The Office Action rejected claims 1-3, 5, 6, 8-12 and 16-26 under 35 U.S.C. § 103(a) as being unpatentable over Srikantan. Applicants respectfully request withdrawal of these rejections because the combination of cited references fails to teach or suggest all of the limitations of the claims.

Applicants' invention generally relates to a technique of reducing bursts in streaming media data traffic, in order to reduce congestion of downstream routers, servers, etc., particularly when a large number of clients have requested the same media data stream at substantially the same time. Such congestion can result in degradation in the quality and smoothness of the data streams that are ultimately delivered to the clients.

In particular embodiments of the present invention, congestion in downstream nodes is reduced by reducing streaming media burst traffic, and more specifically, by adding to each

packet's specified delivery time a delay value that has been pseudo-randomly selected for each client. The effective result of adding the delay value is that the same packet of media data is streamed to different clients at different times. In contrast, Srikantan teaches streaming media data with different timing, meaning that a different portion of the media data is streamed to different clients at the same time.

Specifically, claim 22, as amended, recites:

> A method comprising:
>
> receiving at a streaming media cache, from a media server, a data packet representing a particular portion of a media stream, to be delivered to each of a plurality of client systems at a specified time;
>
> **pseudo-randomly selecting a delay time**; and
>
> at the streaming media cache, for each of the plurality of client systems, **delaying the delivery of the data packet** to the corresponding client system **by the pseudo-randomly selected delay time**, to reduce magnitudes of output traffic bursts from the streaming media cache.

(Emphasis added).

Applicants respectfully disagrees with the Office Action's characterization of the prior art because the cited combination of prior art fails to teach or suggest all of the limitations of the claim. In particular, Srikantan does not teach or suggest "pseudo-randomly selecting a delay time" or "delaying the delivery of the data packet to the corresponding client system by the pseudo-randomly selected delay time."

The Office Action correctly recognized that Srikantan does not teach modifying the media data packet's delivery time for a first and second client respectively. Office Action, 08/09/2007, page 3. The Office Action, however, alleges that Srikantan discloses media frames of a live or pre-recorded event from a single source being simultaneously streamed in a real-time to multiple users in a specified order within a certain period of time. Office Action, page 3. The Office Action further alleges that time delay techniques are utilized in order to deliver the packets of a single live or pre-recorded transmission to multiple clients as described by Srikantan. Office Action, page 3. In order to support the above allegation, the Office Action cites Srikantan's paragraphs 25, 26, 55 and 56, and alleges that "different time indices" disclosed in Srikantan can be used to delay the delivery of a data packet. Office Action, page 3 and page 6. The Office Action then concludes that it would have been obvious to one with ordinary skill in the art to understand that the method disclosed in Srikantan involves modifying the media data

packet's delivery time belonging to single media source in order to accommodate simultaneous real-time transmission to multiple clients. Office Action, page 3.

Srikantan is directed to streaming a media track to multiple clients using a single copy of the track's metadata. Srikantan, Abstract. Srikantan teaches that a track's metadata may include information for identifying a media segment or sample, that should be played for a given time index within the program, for determining where that segment or sample is located in the file. Srikantan, paragraph 0003. Srikantan further teaches that metadata may indicate which unit or piece of media corresponds to a given time index within the media's program, and where to find it within a media file. Srikantan, paragraph 0036. Additionally, Srikantan teaches that metadata identifies which media unit (e.g., audio sample, video frame) corresponds to a given time index in the media program. Srikantan, paragraph, 0041. Thus, the time index merely serves to indicate a specific segment of the media and what position that particular segment should have in the media stream.

The Office Action points to Srikantan, paragraph 0055, which teaches a single media track is streamed to multiple clients, but with different timing, and alleges that this should be interpreted as delaying the delivery time of a media data packet. Office Action, page 6. Srikantan, paragraph 0055 goes on to explain that "different client streams may, at any given time, be streaming media from different time indices within the media track." (Emphasis added). As discussed above, each time index is associated with a particular segment of the media, and thus different time indices refer to different segments of the media data. Therefore, Srikantan teaches that at a given time, different segments of the media data may be streaming to different clients. Srikantan does not teach or suggest creating a pseudo-randomly selected delay time for a packet of media data so that the same segment can be delivered to multiple clients at different times.

Additionally, it would not have been obvious for one of ordinary skill in the art to modify the teachings of Srikantan as purported by the Office Action. One would not be motivated to add a pseudo-random delay value to the delivery time of the media being streamed to different clients. As discussed above, Srikantan discloses streaming different segments of the media data to different clients at any given time. Srikantan, paragraph 0055. This is a result of the fact that the requests for the media data from the different clients occurred at different times. Srikantan, paragraph 0061. If the requests occur at different times then the delivery times will also be

different. Thus, there is no need to add a delay value to the scheduled delivery times. Srikantan does not teach or even suggest regarding pseudo-randomly selecting a delay time.

The Office Action further alleges that Srikantan, paragraph 0026 teaches delaying the delivery of the data packet by a pseudo-randomly selected delay time. Office Action, page 6. Srikantan, paragraph 0026 states:

> Streaming real-time media places constraints upon the issuing server, because delivery of each frame or other unit of the media must be performed in a specified order and within a certain period of time. Thus, despite the number of clients it serves, a media streaming server must strive to meet the demands of streaming real-time media so that the quality of service to the users does not drop to an unacceptable level. For example, regardless of the type of program (i.e., live or pre-recorded) and mode of streaming (i.e., unicast or multicast), **streamed media is generally compressed to decrease the bandwidth that it consumes in transit, thus helping to ensure timely delivery of media to a client**.

(Emphasis added).

Thus, Srikantan points out a problem associated with steaming real-time media, namely, that delivery of each frame or other unit of media by an issuing server must be performed in a specified order and within a certain period of time despite the number of clients the issuing server servers. However, Srikantan, teaches away from delaying the delivery time of a packet. Srikantan instead teaches compressing the streamed media to decrease the bandwidth to ensure timely delivery of media to a client. Srikantan, paragraph 0026 does not teach or suggest modifying a specified packet delivery time of a packet of data. In addition, "delivery of each frame or other unit of the media must be performed in a specified order and within a certain period of time," as taught by Srikantan, does not require, or even suggest, that time delay techniques must be used. Therefore, one skilled in the art would not have been motivated to modify the system in Srikantan as purported by the Office Action.

Given that the cited references fail to teach or suggest all of the limitations of the claim, Applicants respectfully submit that claim 22 is patentable over the cited references. Moreover, claim 22 is patentable because it would not have been obvious to one skilled in the art to modify the teachings of Srikantan as purported by the Office Action. Accordingly, Applicants request that the rejection of claim 22 under 35 U.S.C. § 103(a) be withdrawn.

Independent claims 1, 9 and 16 recite similar limitations to those in claim 22 discussed above and other limitations. Therefore, claims 1, 9 and 16 are also patentable over the cited art for similar reasons. Given that claims 2-3, 5, 6, 8, 10-12, 17-21 and 23-26 directly or indirectly

depend from one of the above independent claims, at least for reasons similar to those discussed above, it is respectfully submitted that dependent claims 2-3, 5, 6, 8, 10-12, 17-21 and 23-26 are patentable over the cited references. Accordingly, Applicants respectfully request reconsideration in view of these remarks.

Applicants have not necessarily discussed here every reason why every pending independent claim is patentable over the cited art; nonetheless, Applicants are not waiving any argument regarding any such reason or reasons. Applicants reserve the right to raise any such additional argument(s) during the future prosecution of this application, if Applicants deem it necessary or appropriate to do so.

Dependent Claims

In view of the above remarks, a specific discussion of the dependent claims is considered to be unnecessary. Therefore, Applicants' silence regarding any dependent claim is not to be interpreted as agreement with, or acquiescence to, the rejection of such claim or as waiving any argument regarding that claim.

Conclusion

For the foregoing reasons, the present application is believed to be in condition for allowance, and such action is earnestly requested.

If there are any additional charges/credits, please charge/credit our deposit account no. 02-2666.

Respectfully submitted,

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Dated: November 9, 2007

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